

means responsive to the detection of an occurrence of a tachyarrhythmia for discriminating between tachycardia and fibrillation and for selecting between said first and second therapies;

said discrimination and therapy selection means including:

- A1
- (i) means for sorting a predetermined number of the measured depolarization intervals into a plurality of interval range bins;
 - (ii) means for determining the number of measured depolarization intervals within each of the interval range bins;
 - (iii) means for defining a discrimination criterion based on determining whether designated ones of the plurality of interval range bins have at least a predetermined threshold number of measured depolarization intervals within them; and
 - (iv) means for triggering delivery of the first therapy if the discrimination criterion is met and for triggering delivery of the second therapy if the discrimination criterion is not met.

A2

3. (Amended) The apparatus of claim 1 wherein the means for defining a discrimination criterion sets a threshold number as a value which increases as an inverse function of the length of the intervals between depolarizations.

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4. (Amended) The apparatus of claim 1 wherein the means for defining a discrimination criterion sets a threshold number as a value which increases as an inverse function of a defined percentile of the length of intervals over a sequence of a predetermined number of intervals between depolarizations.

5. (Amended) The apparatus of claim 1 wherein the means for defining a discrimination criterion sets a threshold number as a value which increases as an inverse function of the 75th percentile of the length of intervals over a sequence of a predetermined number of intervals between depolarizations.

Add new claims 6-11 as follows:

6. The apparatus of claim 1, further comprising means for triggering delivery of the first therapy if the discrimination criterion is met and for triggering delivery of the second therapy if the discrimination criterion is not met.

7. The apparatus of claim 1, wherein the discrimination criterion is used to distinguish between fast VT and VF, and if the discrimination criterion is met, the tachyarrhythmia is determined to be a fast ventricular tachycardia, the first therapy is delivered; and if the discrimination criterion is not met, the tachyarrhythmia is determined to be fibrillation and the second therapy is delivered.

8. The apparatus of claim 1, wherein the discrimination criterion is used to distinguish between VT and fast ventricular rhythms due to atrial fibrillation (VT vs. AF), and if the discrimination criterion is met, the tachyarrhythmia is determined to be a ventricular tachycardia and a tachycardia therapy is delivered; and if the discrimination criterion is not met, the tachyarrhythmia is determined to be due to atrial fibrillation and no therapy is delivered.

9. The apparatus of claim 1, wherein the predetermined threshold number of intervals required in order to meet the discrimination criterion is variable as a function of the underlying rate of the detected tachyarrhythmia.

10. The apparatus of claim 9, wherein the threshold number varies as a decreasing function of the tachyarrhythmia cycle lengths of a preceding series of depolarizations; and wherein the 75th percentile cycle length of the preceding sequence of depolarizations is employed as a measurement metric, with the threshold number of intervals expressed as a percentage of intervals binned decreasing from 100% to 30% in a linear fashion as the 75th percentile cycle length increases.